

Meeting of the AGU Technical Committee on Precipitation

Thursday, Dec. 13, 2007, 6:45 – 7:45AM
Moscone South, Room 220

Participants

Sankar Arumugam, Li-Chuan Chen, Emad Habib, Yang Hong, Rick Lawford, Shaun Lovejoy, Ana Nunes, John Schaake, Daniel Schertzer, and Dong-Jun Seo

AGU Meeting Session Planning

Submitted sessions for AGU Spring Meeting, 27-30 May 2008, Fort Lauderdale, Florida (see Appendix)

- *General Session on Precipitation*
- *Stochastic and Probabilistic Approaches for Analyzing Precipitation in a Changing Environment*

Potential special sessions for AGU Fall Meeting, 15-19 December 2008, San Francisco, California

- New Frontiers in Predicting Precipitation proposed by Ana Nunes
- Scale and Scaling in Precipitation and Hydrology proposed by Shaun Lovejoy and Daniel Schertzer
- Multiple-time Scale of Precipitation Forecasting proposed by Sankar Arumugam
- Exploration of Multi-Sensor Multi-Source Approaches for Integration of Radar, Satellite, Model, and Surface Observations to Produce Next Generation QPF proposed by Y. Hong

The final fall meeting session proposals will be arranged in late June 2008 and posted on the web on July 4.

Important dates for AGU Meeting

- Early-March 2008 — Abstract submission for 2008 Spring Meeting
- Early-June 2008 — Submission of session proposals for 2008 Fall Meeting
- Early-September 2008 — Abstract submission for 2008 Fall Meeting

Precipitation Committee

- Thanks Jeff McCollum's service. Deputy Chair Yang Hong will assume the chair position after June 2008
- At the meeting, Ana Nunes nominated by Rick Lawford and Li-Chuan Chen as Deputy Chair for term 07/2008-06/2010
- Li-Chuan Chen from the University of Iowa volunteered to update the precipitation committee website maintained at the University of Iowa

- Encourage more young scientists to participate the precipitation committee

General Discussion Topics

- Precipitation-related conferences, programs or field experiments:
 - 10-year TRMM Conference, Feb 4-8, 2008, Las Vegas, <http://trmm.gsfc.nasa.gov>*
 - IPWG 4th Conference, Beijing, China, 15-18 Oct. 2008, <http://www.isac.cnr.it/~ipwg/meetings.html>*
 - Radar Hydrology, 10-15 March, Aufrans, France, <http://www.wrah-2008.com/>*
 - EGU General Assembly 2008 several sessions on precipitation*
 - ERAD2008, http://www.fmi.fi/weather/rain_13.html*
 - Weather Radar and Hydrology, France, 10-15 March 2008, <http://www.wrah-2008.com/>*
- Daniel and Shaun reported on 9th Int'l Precip. Conf. and Emerging IAHS Precip. Working Group; they also suggest more collaborative efforts among AGU, Int'l Precip. Conference Committee, IAHS and EGU
- John Schaake suggested our committee should play more proactive roles in a larger community

Appendix

2008 Joint Assembly Session Proposal: General Session on Precipitation

Conveners

Eyal Amitai, Emad Habib, Mekonnen Gebremichael, Firat Y. Testik, Jeffrey R. McCollum

Precipitation is a very important meteorological parameter that strongly affects (and sometimes controls) many of the human activities. On the one hand, numerous hydrologic applications demand accurate precipitation measurements (i.e. by in situ instruments) or quantitative estimates (i.e. by remote sensors). On the other hand, there is an increasing demand for accurate precipitation forecasts from numerical weather prediction models.

This session will host papers on all aspects of precipitation, but more specifically it will put emphasis on the following five sub-areas of precipitation related research: measurements, estimation, space-time variability, hydrologic applications of the estimates, and forecasting. With regard to these five sub-areas some indicative considerations are given below:

Precipitation measurements:

Precipitation measurements (amount, duration, intensity etc.) by ground-based in situ sensors (e.g. rain gauges, disdrometers); estimation of accuracy of measurements, comparison of measuring instrumentation.

Precipitation estimation:

Remote sensing of precipitation (e.g. spaceborne, airborne, ground-based, underwater, or shipborne sensors); methodologies used for the estimation, validation, and assessment of error and uncertainty of precipitation as measured by remote sensors.

Precipitation space-time variability:

Spatial pattern and temporal dynamics of precipitation using stochastic methods and/or nonlinear dynamics based on datasets derived from remote sensing, field experiments and numerical simulations.

Hydrologic applications of precipitation estimates:

The use of remotely-sensed precipitation estimates in hydrological applications such as rainfall-runoff modeling, flash-flood forecasting, flood warning and monitoring, modeling and analysis of urban drainage systems, and propagation of precipitation estimation uncertainties into hydrologic predictions.

Precipitation forecasting:

Quantitative precipitation forecasts from numerical weather prediction models; probabilistic approaches; verification of precipitation forecasts using different techniques (e.g. gridded and object oriented); quantitative precipitation forecasting with radar data and validation; experimental model studies on precipitation forecasting.

2008 Joint Assembly Session Proposal: Stochastic and Probabilistic Approaches for Analyzing Precipitation in a Changing Environment

Conveners:

Li-Chuan Chen, IIHR - Hydroscience & Engineering, The University of Iowa
Jeffrey R. McCollum, FM Global

Stochastic and probabilistic approaches have been widely used to analyze precipitation for many hydrologic applications (e.g., frequency analysis of extreme events and flood risk assessment). To simplify the conditions, traditional approaches usually assume stationarity or univariate distributions of rainfall. However, changes in rainfall processes have been reported in many studies due to changes in environment, such as changes in land use and climate. Emerging statistical techniques (e.g., nonstationary time series analysis, multivariate analysis with copulas, fractal analysis, and wavelet analysis) provide new pathways to analyze precipitation, improve our understanding of the space-time characteristics of rainfall processes, and model these processes for water resources management. The goal of this session is to bring together recent studies on rainfall analysis and modeling in a changing environment using contemporary stochastic and probabilistic approaches. Papers are invited that (1) introduce new statistical techniques for rainfall analysis; (2) assess the effects of climate change (or land use change) on rainfall frequency and patterns; (3) model nonstationary rainfall processes; and (4) address various spatial and temporal issues of precipitation using stochastic and probabilistic approaches. All presentations related to statistical analysis and modeling of precipitation, as well as their applications to water resources management, are welcome.